Town	County	Total Area[1] (sq. mi.)	Total Land Area (less water)[1] (sq. mi.)	Total Area within Study Area[2] (sq. mi.)	Percent of Study Area
Kingston	Plymouth	20.39	18.53	16.53 [16.40]	55.5%
Plympton	Plymouth	15.14	14.79	4.07 [3.88]	13.7%
Pembroke	Plymouth	23.48	21.85	5.15 [4.50]	17.3%
Duxbury	Plymouth	37.63	23.76	3.59	12.0%
Halifax	Plymouth	17.33	15.87	0.32	1.1%
Plymouth	Plymouth	133.99	96.48	0.14	0.4%
Totals:		247.96	191.28	29.80	100.0%

(1) Mass. DHCD Community Profiles (on-line)
(2) Mass. GIS Data (Study Area includes tidal portions) – Areas in brackets equal to Total Area minus area of Silver Lake

TABLE 2-1. Towns of the Jones River watershed

#	Basin or Subbasin	Area (Sq. Mi.)
a	Total Jones River Watershed to Kingston Bay	29.80
b	Freshwater Portion of Jones Watershed to Elm St. Dam	26.88
c	Tidally Influenced Portion of Jones Watershed (a-b)	2.92
1	Mass GIS Subbasin 1 (Silver Lake)	4.09
2a	Mass GIS Subbasin 2 (Pine Brook)	3.34
2b	Mass GIS Subbasin 2 (Pine Brook – South River)[1]	1.42
3	Mass GIS Subbasin 3 (Halls Brook)	4.11
4	Mass GIS Subbasin 4 (Jones River Brook)	4.80
5	Mass GIS Subbasin 5 (Furnace Brook)	2.25
6	Mass GIS Subbasin 6 (Smelt Brook)	2.69
7	Mass GIS Subbasin 7 (Jones River - Fresh)	4.18
8	Mass GIS Subbasin 8 (Jones River – Tidal)	2.92

[1] Pine Brook – South River subbasin can also contribute flow northward to the South River watershed, depending on the operational practices of a local cranberry bog.

TABLE 2-2. Basin and Subbasin Areas

Stream Name	Length (mi.)	Approx. Upper End Elevation (ft.)	Approx. Lower End Elevation (ft.)	Confluence
Jones River	7.4	50	0	Kingston Bay
Barrows Brook	1.7	80	45	Jones River Brook
Bassett Brook	1.9	80	30	Halls Brook
Furnace Brook	2.7	123	20	Jones River
Halls Brook	4.3	100	0	Jones River
Jones River Brook	5.2	100	35	Jones River
Mile Brook	1.3	60	25	Halls Brook
Pine Brook	4.8	94	30	Jones River
Smelt Brook	1.4	107	0	Jones River
Tubbs Meadow Brook	1.9	70	47	Silver Lake
Fountainhead Brook	1.6	50	30	Jones River

Note: Sources of data include topographic maps and general visual information. Data is approximate and is intended only for general and comparative purposes.

TABLE 2-3. River and Stream Data

Pond Name	Dam or Control	Sub-basin	Stream Impounded	Stream Discharged	Normal Surface Area (acres)
Foundry Pond	Foundry Pond Dam	Smelt Brook	Smelt Brook	Smelt Brook	64
Reed Mill Pond	Reed Mill Pond Dam	Pine Brook	Pine Brook	Pine Brook	50
Forge Pond			Jones River	Jones River	
Silver Lake	Silver Lake Dam	Silver Lake	none	Jones River	3550
Bracketts Pond	Bracketts Pond Dam	Halls Brook	Halls Brook	Halls Brook	65
Russell Mill Pond	Russell Mill Pond Dam	Furnace Brook	Tributary-Furnace Brook	TR-Furnace Brook	360
Dennetts Pond	Dennetts Pond Dam	Jones River Brook	Jones River Brook	Jones River Brook	153
Lower Chandler Pond	Lower Chandler Pond Dam	Pine Brook	Pine Brook	Pine Brook	53
Upper Chandler Pond	Upper Chandler Pond Dam	Pine Brook/ South River	Pine Brook	Pine Brook	54

TABLE 2-4. Partial Listing of Lakes and Ponds

Total Watershed

Soil Types	Area (sq. mi.)	Coverage (%)
Sand & Gravel / Large Sand Deposits	25.0	83.8
Till & Bedrock	1.3	4.5
Floodplain Alluvium	2.0	6.8
Open Water	1.5	4.9
TOTAL	29.8	100

HALLS BROOK	
Name	Percent
SAND & GRAVEL	85.0%
TILL OR BEDROCK	6.5%
FLOODPLAIN ALLUVIUM	8.6%

FURNACE BROOK	
Name	Percent
SAND & GRAVEL	88.6%
TILL OR BEDROCK	3.2%
LARGE SAND DEPOSITS	5.1%
FLOODPLAIN ALLUVIUM	3.1%

PINE BROOK (& SOUTH COASTAL)	
Name	Percent
SAND & GRAVEL	86.6%
FLOODPLAIN ALLUVIUM	13.4%

JONES RIVER BROOK	
Name	Percent
SAND & GRAVEL	60.7%
TILL OR BEDROCK	11.3%
LARGE SAND DEPOSITS	7.1%
FLOODPLAIN ALLUVIUM	21.0%

SILVER LAKE	
Name	Percent
SAND & GRAVEL	77.9%
FLOODPLAIN ALLUVIUM	22.1%

SMELT BROOK	
Name	Percent
SAND & GRAVEL	91.0%
TILL OR BEDROCK	5.2%
FLOODPLAIN ALLUVIUM	3.9%

PINE BROOK (ONLY JONES RIVER)	
Name	Percent
SAND & GRAVEL	85.1%
LARGE SAND DEPOSITS	8.9%
FLOODPLAIN ALLUVIUM	6.1%

JONES RIVER	
Name	Percent
SAND & GRAVEL	80.8%
TILL OR BEDROCK	4.2%
LARGE SAND DEPOSITS	7.9%
FLOODPLAIN ALLUVIUM	7.1%

TIDAL	
Name	Percent
SAND & GRAVEL	83.1%
TILL OR BEDROCK	5.4%
FLOODPLAIN ALLUVIUM	11.4%

TABLE 2-5. General Surficial Geology within Watershed

Class	TOTAL Percent	TIDAL Percent	SMELT BROOK Percent	SILVER LAKE Percent	JONES RIVER BROOK Percent	JONES RIVER Percent	HALLS BROOK Percent	FURNACE BROOK Percent	SOUTH & JONES Percent	PINE BROOK Percent
Cropland	0.6%	0.9%		0.1%	0.3%	0.8%	2.4%	0.3%	0.4%	
Pasture	1.0%	2.4%	0.7%		2.0%	1.2%	1.8%	0.1%		
Forest	52.4%	37.9%	59.5%	43.4%	63.9%	54.2%	42.8%	60.8%	57.8%	55.0%
Wetland	2.7%	2.3%	0.6%	2.3%	1.8%	4.0%	4.2%	0.7%	3.9%	4.3%
Mining	2.3%	2.8%	8.6%	0.8%	2.7%	2.6%	0.1%	4.2%	0.1%	0.3%
Open Land	2.0%	6.5%	0.9%	0.9%	2.0%	1.6%	1.8%	2.6%	1.5%	0.8%
Participation Recreation	0.0%	0.3%								0.1%
Spectator Recreation	0.3%	0.9%				0.6%	0.5%		0.1%	0.6%
Water Recreation	0.0%									
Multi-Family Residential	0.3%	0.5%	0.3%	0.2%		0.0%	1.2%			0.2%
<1/4 ac. lot Residential	0.4%	1.3%					1.9%			
1/4 to 1 ac. Residential	8.3%	16.8%	4.6%	9.6%	2.9%	10.2%	6.5%	3.3%	12.0%	11.9%
> 1 ac Residential	13.0%	10.0%	3.2%	11.9%	12.5%	11.6%	22.7%	16.2%	6.3%	15.9%
Salt Marsh	0.6%	5.8%								
Commercial	1.3%	1.8%	7.3%	0.1%	0.4%	0.2%	2.3%	0.0%		0.2%
Industrial	0.6%	1.3%	1.6%			1.0%	1.2%			
Urban Open	0.7%	0.3%	2.6%	0.1%	0.0%	0.3%	0.3%	0.8%	5.4%	0.3%
Transportation	0.8%	4.1%	2.6%			0.2%	1.2%			
Waste Disposal	0.1%		0.3%		0.1%	0.5%	0.1%			
Water	5.1%	0.9%	4.4%	23.3%	1.2%	0.7%	1.0%	5.6%	4.4%	3.0%
Cranberry Bog	4.9%	0.4%	2.1%	5.4%	6.8%	7.1%	3.8%	4.2%	8.1%	5.2%
Powerlines	1.5%	0.4%	0.8%	0.5%	2.4%	2.5%	2.7%	0.7%		1.8%
Urban Public	0.5%	2.0%		1.1%	0.2%	0.2%	0.1%			0.5%
Transportation	0.0%	0.1%		0.1%			0.1%			
Cemetary	0.1%	0.1%					0.6%	0.2%	0.0%	
Nursery	0.3%	0.3%			0.8%	0.4%	0.5%	0.2%		
TOTAL AREA (SQ.MI.)	29.8	2.92	2.69	4.09	4.8	4.18	4.11	2.25	1.42	3.34

* Land Use data from MassGIS (1990); areal extents derived from ArcView GIS application.

TABLE 2-6A. Estimated General Land Use Within Watershed

	Average % impervious area	Total		Tidal		Smelt Brook	
		% landuse	% impervious	% landuse	% impervious	% landuse	% impervious
Open land	20	2	0.40	6.5	1.30	0.9	0.18
Multi-Family Residential	38	0.3	0.11	0.5	0.19	0.3	0.11
<1/4 ac. Residential	38	0.4	0.15	1.3	0.49	0	0.00
1/4 - 1 ac. Residential	28	8.3	2.32	16.8	4.70	4.6	1.29
> 1 ac. Residential	12	13	1.56	10	1.20	3.2	0.38
Commercial	85	1.3	1.11	1.8	1.53	7.3	6.21
Industrial	72	0.6	0.43	1.3	0.94	1.6	1.15
Urban Open	20	0.7	0.14	0.3	0.06	2.6	0.52
Transport	100	0.8	0.80	4.1	4.10	2.6	2.60
Urban Public	20	0.5	0.10	2	0.40	0	0.00
Transport	100	0	0.00	0.1	0.10	0	0.00
TOTAL			7.13		15.01		12.44

	Average % impervious area	Silver Lake		Jones River Brook		Jones River	
		% landuse	% impervious	% landuse	% impervious	% landuse	% impervious
Open land	20	0.9	0.18	2	0.40	1.6	0.32
Multi-Family Residential	38	0.2	0.08	0	0.00	0	0.00
<1/4 ac. Residential	38	0	0.00	0	0.00	0	0.00
1/4 - 1 ac. Residential	28	9.6	2.69	2.9	0.81	10.2	2.86
> 1 ac. Residential	12	11.9	1.43	12.5	1.50	11.6	1.39
Commercial	85	0.1	0.09	0.4	0.34	0.2	0.17
Industrial	72	0	0.00	0	0.00	1	0.72
Urban Open	20	0.1	0.02	0	0.00	0.3	0.06
Transport	100	0	0.00	0	0.00	0.2	0.20
Urban Public	20	1.1	0.22	0.2	0.04	0.2	0.04
Transport	100	0.1	0.10	0	0.00	0	0.00
TOTAL			4.80		3.09		5.76

	Average % impervious area	Pine Brook		Furnace Brook		South & Jones	
		% landuse	% impervious	% landuse	% impervious	% landuse	% impervious
Open land	20	0.8	0.16	2.6	0.52	1.5	0.30
Multi-Family Residential	38	0.2	0.08	0	0.00	0	0.00
<1/4 ac. Residential	38	0	0.00	0	0.00	0	0.00
1/4 - 1 ac. Residential	28	11.9	3.33	3.3	0.92	12	3.36
> 1 ac. Residential	12	15.9	1.91	16.2	1.94	6.3	0.76
Commercial	85	0.2	0.17	0	0.00	0	0.00
Industrial	72	0	0.00	0	0.00	0	0.00
Urban Open	20	0.3	0.06	0.8	0.16	5.4	1.08
Transport	100	0	0.00	0	0.00	0	0.00
Urban Public	20	0.5	0.10	0	0.00	0	0.00
Transport	100	0	0.00	0	0.00	0	0.00
TOTAL			5.81		3.55		5.50

Notes: 1. Average percent impervious estimated from U.S. Dept. of Agriculture, Soil Conservation Service, Technical Release 55 “Urban Hydrology for Small Watersheds,” June 1986.

2. Percent landuse estimated using MassGIS data layer and ArcView GIS.

TABLE 2-6B. Estimated Impervious Areas Within Each Sub-Watershed

Town	Total Permanent Population[1] (2000)	Population Density (per land sq. mi.)	Number of Households[2]	Average Household Size	Estimated Population within Study[3] Area (1998)
Towns within Watershed Boundaries					
Kingston	11,780	636	4,096	2.9	10,426
Plympton	2,637	178	919	2.9	692
Pembroke	16,927	775	5,582	3.0	3,486
Duxbury	14,248	600	5,213	2.7	2,153
Halifax	7,500	473	2,857	2.6	151
Plymouth	51,701	536	18,644	2.8	0
Totals:	104,793	548	37,311	2.8	16,908
Towns Outside of Watershed which Draw Water from Basin					
Brockton	94,304	4,392	33,363	2.8	N/A
Hanson	9,495	632	3,262	2.9	N/A
Whitman	13,882	1,995	4,633	3.0	N/A
Totals:	117,681	1,975	49,871	2.8	N/A

(1) US Census Bureau data – Census 2000
(2) MAPC, Households Forecasts, 2001
(3) Proportioned by percent of town area (minus Silver Lake) within overall study area
(4) Towns of Marshfield and Abington sporadically purchase statistically insignificant amounts of water from Duxbury and Brockton.

TABLE 2-7. Population Statistics – Permanent Residents

Town	Population by Year				
	1990[1]	**2000[1]**	**2010[2]**	**2020[2]**	**Buildout[3]**
Kingston	9,045	11,780	12,997	14,792	17,401
Plympton	2,384	2,637	3,202	3,689	9,409
Pembroke	14,544	16,927	18,021	19,732	22,108
Duxbury	13,895	14,248	16,761	18,396	23,693
Halifax	6,526	7,500	8,767	9,858	13,114
Plymouth	45,608	51,701	60,421	67,778	104,066
Totals:	92,002	104,793	120,169	134,245	189,791
Brockton	92,788	94,304	89,181	88,949	105,889
Hanson	9,028	9,495	10,755	11,935	21,494
Whitman	13,240	13,882	14,163	14,385	17,948
Totals:	115,056	117,681	114,099	115,269	145,331

(1) U.S. Census Bureau figures, 2000.
(2) MAPC, Population Forecasts, 2001
(3) MA EOEA, Community Data Profiles – Buildout Projections

TABLE 2-8. Population Trends – Permanent Residents

Name of Station	Recording Frequency	Period of Record
Boston, Logan International Airport	Hourly	January 1936 to Present
East Milton Blue Hill Observatory	Hourly	January 1900 to Present
South Weymouth Naval Air Station	Hourly	June 1942 to Present
Pembroke	Daily	June 1948 to January 1989
Plymouth-Kingston	Daily	June 1948 to Present

TABLE 3-1. Climate Stations in and around the Jones River watershed.

Month	Plymouth-Kingston	Boston	Blue Hill	South Weymouth	Pembroke
JAN	4.06	3.59	4.15	4.41	4.44
FEB	3.75	3.62	4.31	4.33	4.41
MAR	4.38	3.69	4.41	3.93	4.31
APR	4.18	3.60	4.05	4.21	4.42
MAY	3.44	3.25	3.80	3.58	3.70
JUNE	3.27	3.09	3.43	2.89	2.92
JULY	3.14	2.84	3.49	2.81	3.17
AUG	3.87	3.24	3.92	3.83	4.22
SEP	3.87	3.06	3.82	3.65	3.71
OCT	3.79	3.30	3.94	4.04	3.97
NOV	4.43	4.22	4.92	4.55	5.02
DEC	4.47	4.01	4.71	4.86	4.54
YEAR	46.65	41.51	48.95	47.09	48.83

TABLE 3-2. Average monthly and annual precipitation at the Plymouth-Kingston gage in the Jones River watershed as compared to other nearby gages.

Month	Average Temperature (^{0}F)	Average Rainfall (in)	Potential Evapo-transpiration (in)
JAN	28.9	4.06	0.00
FEB	29.6	3.75	0.00
MAR	37.2	4.38	0.36
APR	47.2	4.18	1.45
MAY	57.9	3.44	3.11
JUNE	67.2	3.27	4.57
JULY	72.8	3.14	5.49
AUG	71.0	3.87	5.28
SEP	64.1	3.87	3.40
OCT	54.1	3.79	1.98
NOV	43.6	4.43	0.78
DEC	33.0	4.47	0.04
ANNUAL	50.6	46.65	26.50

TABLE 3-3. Potential Evapotranspiration estimates for the Jones River watershed based on Thornthwaite's Equation.

USGS Gage 01105870 at Elm Street: JONES RIVER (Drainage Area = 19.8 mi^2)					
Exceedance Probability (percent)	Estimated Discharge (cfs)	Estimated Discharge (cfsm)	Exceedance Probability (percent)	Estimated Discharge (cfs)	Estimated Discharge (cfsm)
99	4.5	0.23	45	27.4	1.38
98	5.4	0.27	40	30.5	1.54
95	7.2	0.36	35	33.7	1.70
90	9.1	0.46	30	37.0	1.87
85	11.2	0.57	25	41.7	2.11
80	13.0	0.66	20	47.1	2.38
75	14.7	0.74	15	54.8	2.77
70	16.5	0.83	10	65.3	3.30
65	18.4	0.93	5	87.3	4.41
60	20.3	1.03	2	124.5	6.29
55	22.4	1.13	1	148.4	7.49
50	24.9	1.26			

Notes: Data generated by GZA.
(cfs) = cubic feet per second;
(cfsm) = cubic feet per second per square mile of drainage area;
Exceedance probability refers to percent of time that the indicated streamflow (or discharge) was equaled or exceeded

TABLE 3-4a. Streamflow statistics from the USGS Stream Gage on Jones River at Elm Street (01105870)

JONES RIVER BROOK (D.A. = 4.74 mi^2)			
Exceedance Probability (percent)	Estimated Discharge (cfs)	Estimated Discharge (cfsm)	Standard Error (percent)
99	0.60	0.13	13.5
98	0.79	0.17	11.3
97	0.95	0.20	10.0
95	1.23	0.26	8.9
93	1.47	0.31	8.6
90	1.81	0.38	9.1
85	2.38	0.50	10.2
80	2.97	0.63	11.6
75	3.93	0.83	13.7
70	5.09	1.07	15.9
65	6.46	1.36	18.1
60	7.61	1.61	19.6
55	9.63	2.03	21.9
50	11.5	2.43	23.7
August median	3.11	0.66	16.8
7Q10	0.49	0.10	10.1
7Q2	1.24	0.26	15.9

Notes: Source: USGS Water-Resources Investigations Report 99-4006, "Streamflow Measurements, Basin Characteristics, and Streamflow Statistics for Low-Flow Partial-Record Stations Operated in Massachusetts from 1989 Through 1996" 1999.

(cfs) = cubic feet per second;

(cfsm) = cubic feet per second per square mile of drainage area;

Exceedance probability refers to percent of time that the indicated streamflow (or discharge) was equaled or exceeded

7Q10 = 7 day duration, 10 year recurrence interval low flow

7Q2 = 7 day duration, 2 year recurrence interval low flow

TABLE 3-4b. Streamflow statistics the low-flow partial record (LFPR) USGS gage on Jones River Brook (01105861). (USGS, 1996)

Stream	Location	Drainage Area (mi^2)	Subbasin	Date of Measurement	Flow Measurement (cfs)	Flow Measurement (cfsm)	Flow Duration at USGS gage 01105870[1]
Jones River	100 ft downstream from culvert at Lake St.	4.18	Jones River	8/21/87	0.01	0.002	95
Pine Brook	Culvert at Grove St.	4.81	Pine Brook	8/19/87 8/21/87	0.28 0.44	0.06 0.09	96 95
Jones River Brook	Culvert at West St.	4.72	Jones River Brook	8/21/87	0.44	0.09	95
Jones River	Culvert at Private Rd, 2,700 ft north of Rt 106	14.7	Jones River	8/18/87	2.3	0.16	94
Jones River	30 ft upstream from confluence w/ cranberry bog, 1.6 mi. west of Kingston ctr.	16.2	Jones River	8/18/87	2.2	0.13	94
Fountainhead Brook	1800 ft south of Rt 106	0.53	Jones River	8/18/87	0.04	0.08	94
Jones River	50 ft downstream from confluence w/ Fountainhead Brook	17.3	Jones River	8/18/87	1.8	0.10	94
Furnace Brook	At footbridge in conservation land	1.99	Furnace Brook	8/19/87	2.4	1.2	96
Bassett Brook	At culvert on Winthrop St.	0.81	Halls Brook	8/19/87 8/26/87	0.82 0.65	1.01 0.80	96 95
Mile Brook	200-ft north of Winthrop St.	0.73	Halls Brook	8/19/87 8/26/87	0.26 0.28	0.36 0.38	96 95
Halls Brook	At culvert on Maple St.	4.14	Halls Brook	8/21/87	2.0	0.48	95
Smelt Brook	At culvert on Raboth Rd	0.59	Smelt Brook	7/1/86 8/26/87	0.17 0.13	0.29 0.22	85 95
Smelt Brook	At culvert on Cranberry Rd	0.91	Smelt Brook	7/1/86 8/26/87	0.42 0.34	0.46 0.37	85 95

1. Simultaneous flow duration percentage at the USGS gage on the Jones River at Elm Street at time of baseflow measurement.

TABLE 3-5. USGS baseflow measurements in the Jones River Watershed (USGS WRI 91-411)

	Yield for Indicated Percent Exceedence			
Location/Aquifer	**80**	**85**	**90**	**95**
Upper Jones River (MGD)	3.3	2.5	2.2	1.9
Upper Jones River (cfsm)	0.69	0.53	0.46	0.40
Halls Brook (MGD)	2.7	2.1	1.8	1.5
Halls Brook (cfsm)	1.06	0.83	0.71	0.59
Jones River Brook (MGD)	0.9	0.8	0.8	0.7
Jones River Brook (cfsm)	1.47	1.30	1.30	1.14
Pine Brook (MGD)	0.7	0.5	0.5	0.4
Pine Brook (cfsm)	0.23	0.16	0.16	0.13
Kingston Coastal (including Smelt Brook) (MGD)	5.2	4.6	4.3	3.9
Kingston Coastal (including Smelt Brook) (cfsm)	1.90	1.68	1.57	1.43
Furnace Brook (MGD)	2.4	2.1	1.8	1.5
Furnace Brook (cfsm)	1.88	1.64	1.41	1.17

TABLE 3-6. USGS Aquifer Yield Estimates (USGS WRI 91-4112).

Water Supplier	**Registered Average Daily Withdrawal Rate (MGD)**	**Permitted Average Daily Withdrawal Rate (MGD)**	**Total Registered & Permitted Average Daily Withdrawal Rate (MGD)**	**Water Supply Sources**	
				Ground-water Wells	**Surface water Sources**
Brockton Water Commission[1]	11.11	0.83	11.94	1 (0 in watershed)	2 (1 in watershed)
Kingston Water Department	0.99	To 8/31/05: 0.54 As of 9/1/05: 0.57	1.53 1.56	6 (6 in watershed)	0
Duxbury Water Department	1.23	0.62	1.85	9 (1 in watershed)	0
Pembroke Water Department	0.99	To 8/31/05: 0.24 As of 9/1/05: 0.27	1.23 1.26	4 (1 in watershed)	0

(1) Service to Halifax, Hanson, and Whitman.

TABLE 4-1. Registered and Permitted Public Water Supply Withdrawals

Source Name	Location	Approved Daily Pump Vol. (MGD)	Safe Yield[1] (MGD)
Duxbury			
Lake Shore Dr. Well	360 Lake Shore Dr	Not reported	0.504
Pembroke			
GP Well #1	Near Mill Street	0.53	0.576
GP Well #2	Center Street	1.0	1.0368
GP Well #3	Near School Street	0.50	0.504
GP Well #4	Near Bryantville Sch.	1.0	1.0
Kingston			
Soules Pond GP Well #1	Millgate Road	0.36	0.0
South Street GP Well	South Street	1.0	1.057
Winthrop Street GP Well (inactive)	Winthrop Street	0.0	0.0
Millgate Road GP Well	Millgate Road	0.72	0.072
Trackle Pond Well		1.27	NO
Grassy Hole GP Well	Off Smith's Lane	1.15	1.18

Note: The reported "Safe Yield" of the well is as reported in the DEP Water Management Act files and refers to the dependable yield of the well under drought conditions and does not incorporate environmental concerns regarding streamflow depletion/aquifer drawdown.

TABLE 4-2. Physical Characteristics of Wells in the Jones River watershed.

		Basin of Water Supply			
Town	Total Withdrawals[2] (MGD)	Jones River (MGD)	Taunton River (MGD)	Other South Coastal (MGD)	Percent of Service Population Supplied from Jones River Watershed
Brockton	9.55	9.28	0.27	0.00	97.1%
Whitman[3]	0.93	0.90	0.03	0.00	97.1%
Hanson[3,4]	0.05	0.05	0.00	0.00	7.3%
Subtotal	10.53	10.23	0.30	0.00	89.9%
Kingston	1.28	1.28	0.00	0.00	100.0%
Duxbury	1.49	0.13	0.00	1.36	8.7%
Pembroke	1.23	0.26	0.00	0.97	21.4%
Plympton[1]	0.18	0.04	0.00	0.14	26.2%
Total	14.71	11.94	0.30	2.47	75.2%

(1) Self supplied residential users outside of Plympton are insignificant in number.
(2) Average for 1996-2000 except Plympton. Plympton self-supplies estimated based on USGS per-capita demand estimates for Massachusetts.
(3) Hanson and Whitman buy water from the Brockton Water Commission, 7.3% and 100% of each town's total demand, respectively; demand numbers for these Towns are included in the withdrawals reported by the City of Brockton. Halifax, Abington, Avon, and Pembroke purchase statistically insignificant (< 0.1 MGD) amounts of water from the Brockton Water Commission.
(4) Brockton is required by state law to provide Hanson with water even if Hanson is able to develop its own sources. Currently, Hanson gets 92.7% of its water from its own sources.

TABLE 4-4. Public Water Suppliers From Jones River Watershed (1996 to 2000).

Town	Water Supplier	Current Permanent Pop. (2000)	% of Town Served	Year Round Service Pop.	Seasonal Pop.	Seasonal Pop. Factor (x 0.25)	Total Adj. Service Pop.	Adjusted % Served from Jones River Watershed[1]	Adj. Service Pop. Supplied from Jones Watershed
Kingston	Kingston WD	11,780	100%	11,780	0	0	11,780	100%	11,780
Duxbury	Duxbury WD	14,248	100%	14,248	2,000	500	14,748	8.70%	1,283
Pembroke	Pembroke WD	16,927	100%	16,927	0	0	16,927	21.40%	3,622
Plympton	Self-Supplied	2,637	100%	2,637	0	0	2,637	26.24%	692
Brockton	Brockton WC	94,304	100%	94,304	0	0	94,304	97.10%	91,569
Whitman	Brockton WC	13,882	100%	13,882	0	0	13,882	97.10%	13,479
Hanson	Brockton WC	9,495	7.33%	696	0	0	696	100%	696
Subtotal	**Brockton WC**	117,681		108,882	0	0	109,382	89.9%	105,745
Total		163,273		154,474	2,000	500	154,974	79.4%	123,122

(1) Based on percentage of total water production withdrawn from sources within the Jones River watershed.

TABLE 4-5. Domestic Service Population (2000)

		Projected Adjusted Service Population			
Town	Water Supplier	2000[1]	2010[2]	2020[2]	Build Out[3]
Kingston	Kingston Water Dept.	11,780	12,997	14,792	17,401
Duxbury	Duxbury Water Dept.	1,283	1,458	1,600	2,061
Pembroke	Pembroke Water Dept.	3,622	3,856	4,223	4,731
Plympton	Self-Supplied	692	840	968	2,469
Brockton	Brockton WC	91,569	87,219	86,992	103,559
Whitman	Brockton WC	13,479	13,851	14,069	17,553
Hanson	Brockton WC	696	796	883	1,591
Subtotal	**Brockton WC**	105,745	101,866	101,944	122,703
Total		123,122	121,017	123,527	149,365

(1) Based on U.S. Census Bureau Figures.
(2) Based on MAPC population projections (April, 2000).
(3) Based on MA EOEA, Community Data Profiles – Buildout Projections.
(4) See Table 2-8 for Total Population Trends.

TABLE 4-6. Projected Service Population (Jones River Watershed Only)

Water Supplier / User[1,2]	Kingston WD				Duxbury WD				Pembroke WD				Brockton WC			
	ADD[3]	Max. Daily Demand	Peak Factor	Avg. Annual Demand	ADD	Max. Daily Demand	Peak Factor	Avg. Annual Demand	ADD	Max. Daily Demand	Peak Factor	Avg. Annual Demand	ADD	Max. Daily Demand	Peak Factor	Avg. Annual Demand
	mgd	mgd		mg/yr	mgd	mgd		mg/yr	mgd	mgd		mg/yr	mgd	mgd		mg/yr
1996	1.28	2.80	2.19	469.3	1.36	3.43	2.52	498.0	1.21	2.14	1.77	442.4	11.41	13.46	1.18	4174.8
1997	1.30	3.07	2.36	473.8	1.61	4.70	2.92	585.9	1.18	2.76	2.34	431.3	10.64	14.21	1.34	3884.1
1998	1.17	2.21	1.89	426.9	1.63	3.95	2.42	593.2	1.24	2.48	2.00	452.6	9.73	11.79	1.21	3552.9
1999	1.33	2.88	2.17	486.5	1.50	4.16	2.77	547.1	1.30	N/A[4]	N/A	475.6	10.15	12.00	1.18	3704.0
2000	1.30	2.66	2.05	477.2	1.33	3.05	2.29	486.1	1.23	N/A	N/A	449.6	10.70	13.80	1.29	3917.4
Average	1.28	2.72	2.13	466.8	1.49	3.86	2.59	542.1	1.23	2.46	2.00	450.3	10.53	13.05	1.24	3846.6

(1) Based on information provided on DEP Office of Watershed Management Annual Water Supply Statistical Report.
(2) Does not include Plympton self-supplied users.
(3) Average Daily Demand.
(4) Not Available.

TABLE 4-7(a). Annual Water Demand (All Sources)

	1996-2000 Average						2000					
	All Sources				Jones Watershed		All Sources				Jones Watershed	
Water Supplier/User	Base ADD[1] (MGD)	Max. Daily Demand (MGD)	Peak Factor	Base Annual Demand (MG/yr)	ADD (MGD)	Annual Demand (MG/yr)	Base ADD (MGD)	Max. Daily Demand (MGD)	Peak Factor	Base Annual Demand (MG/yr)	ADD (MGD)	Annual Demand (MG/yr)
Kingston Water Department	1.28	2.72	2.13	466.8	1.28	466.8	1.30	2.66	2.05	477.2	1.30	477.2
Duxbury Water Department	1.49	3.86	2.59	542.1	0.13	47.2	1.33	3.05	2.29	486.1	0.09	42.3
Pembroke Water Department	1.23	2.46	2.00	450.3	0.26	96.4	1.23	N/A[3]	N/A	449.6	0.26	96.2
Plympton Self-Supplied Users[2]	0.18	0.32	1.78	62.8	0.04	16.6	0.18	0.32	1.78	62.8	0.04	16.6
Brockton Water Commission	10.53	13.05	1.24	3,846.6	10.23	3,458.1	10.70	13.80	1.29	3,917.4	10.28	3,521.7
Total	14.71	22.41	1.52	5,368.6	11.94	4085.1	14.74	N/A	N/A	5,393.1	11.97	4154.0

(1) Average Daily Demand.

(2) Self-supplied water use based on average Massachusetts per capita demand of 68 gpcd from USGS "Estimated Use of Water in the United States in 1995." Maximum daily demand based on peaking factor of 1.8.

(3) Not Available.

TABLE 4-7(b). Total Water Demand (All Sources)

	Water Supplier[1]									
Month	Kingston WD		Duxbury WD		Pembroke WD		Brockton WC		Total	
	Total (MG)	%	Total (MG)	%	Total (MG)	%	Total (MG)	%	Total (MG)	%
Jan.	30.5	6.5%	34.4	6.4%	32.4	7.2%	319.3	8.3%	411.10	7.9%
Feb.	28.3	6.1%	30.5	5.6%	29.4	6.5%	293.1	7.6%	374.66	7.2%
Mar.	31.5	6.8%	34.2	6.3%	33.0	7.3%	313.5	8.2%	407.56	7.8%
Apr.	32.1	6.9%	35.1	6.5%	33.1	7.4%	303.9	7.9%	400.54	7.7%
May	41.8	9.0%	49.3	9.1%	43.6	9.7%	325.0	8.5%	454.97	8.7%
June	54.8	11.7%	70.3	13.0%	50.2	11.1%	338.9	8.8%	512.01	9.8%
July	58.4	12.5%	72.8	13.4%	48.0	10.7%	348.9	9.1%	523.57	10.0%
Aug.	49.3	10.6%	60.4	11.2%	42.1	9.3%	339.7	8.8%	485.25	9.3%
Sept.	41.0	8.8%	45.2	8.3%	37.1	8.3%	315.8	8.2%	431.14	8.2%
Oct.	35.5	7.6%	41.0	7.6%	34.8	7.7%	317.7	8.3%	420.08	8.0%
Nov.	31.6	6.8%	33.9	6.3%	32.9	7.3%	305.8	8.0%	395.39	7.6%
Dec.	32.1	6.9%	35.1	6.5%	33.6	7.5%	325.0	8.5%	417.69	8.0%
Total	466.8	100.0%	542.1	100.0%	450.3	100.0%	3846.7	100.0%	5233.95	100.0%

(1) Based on information provided on DEP Office of Watershed Management Annual Water Supply Statistical Report. Data in table represents five-year average. Figures may not add exactly to totals due to independent rounding.

TABLE 4-8(a). Monthly Demand (All Sources, 1996 to 2000)

	Water Supplier[1]									
Month	Kingston WD		Duxbury WD		Pembroke WD		Brockton WC		Total	
	Total (MG)	%	Total (MG)	%	Total (MG)	%	Total (MG)	%	Total (MG)	%
Jan.	30.5	6.5%	2.5	5.2%	4.9	5.2%	313.7	8.4%	351.8	8.1%
Feb.	28.3	6.1%	2.6	5.4%	6.9	7.3%	283.8	7.6%	325.7	7.5%
Mar.	31.5	6.8%	2.5	5.3%	8.2	8.6%	306.2	8.2%	351.8	8.1%
Apr.	32.1	6.9%	2.3	4.8%	6.2	6.5%	298.7	8.0%	338.8	7.8%
May	41.8	9.0%	2.7	5.6%	11.7	12.3%	317.4	8.5%	373.5	8.6%
June	54.8	11.7%	3.5	7.3%	10.3	10.8%	328.6	8.8%	395.2	9.1%
July	58.4	12.5%	5.2	11.0%	10.4	10.9%	332.3	8.9%	408.3	9.4%
Aug.	49.3	10.6%	4.3	9.0%	9.0	9.5%	321.1	8.6%	386.6	8.9%
Sept.	41.0	8.8%	3.6	7.6%	7.2	7.6%	302.5	8.1%	356.2	8.2%
Oct.	35.5	7.6%	4.5	9.4%	7.8	8.2%	306.2	8.2%	356.2	8.2%
Nov.	31.6	6.8%	8.3	17.5%	7.2	7.6%	302.5	8.1%	343.1	7.9%
Dec.	32.1	6.9%	5.7	11.9%	5.2	5.5%	317.4	8.5%	356.2	8.2%
Total	466.8	100.0%	47.5	100.0%	95.0	100.0%	3734.0	100.0%	4343.3	100.0%

(1) Based on information provided on DEP Office of Watershed Management Annual Water Supply Statistical Report. Data in table represents five-year average. Figures may not add exactly to totals due to independent rounding.

TABLE 4-8(b). Monthly Demand (Jones River Watershed Only, 1996 to 2000)

User Group	Kingston WD	Duxbury WD	Pembroke WD	Plympton Self-Supplied Users[1]	Brockton WC	Weighted Total[2,3]	Pro-rated Total from Jones River Watershed[4]
Residential	67.2%	86.7%	78.1%	100.0%	64.4%	68.0%	65.3%
Commercial	13.1%	0.0%	0.0%	0.0%	9.6%	8.1%	9.6%
Industrial/ Agriculture[5]	0.5%	0.0%	0.0%	0.0%	3.3%	2.4%	2.9%
Other	4.6%	5.8%	5.9%	0.0%	13.9%	11.5%	12.6%
Unaccounted-for	14.6%	7.5%	16.0%	0.0%	8.6%	10.5%	9.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

(1) All demand from private wells in Plympton assumed to be residential.
(2) Total weighted by each town's total demand.
(3) Based on information provided on DEP Office of Watershed Management Annual Water Supply Statistical Report. Figures may not add to totals due to independent rounding.
(4) Pro-rated total from Jones River Watershed weighted by each town's demand supplied from Jones River Watershed.
(5) Does not include self-supplied users (e.g. cranberry farmers). May include Commercial or Industrial/Agriculture users.

TABLE 4-9. Water Distribution by User Group (1996 to 2000)

Supplier	Total Adjusted Service Population (2000)	Residential Demand (MGD) (5-Yr Average)	Actual (Residential) Per Capita Demand (gpcd)	Total Demand from all Sources (MGD)	Gross (Base) Per Capita Demand (gpcd)
Kingston WD	11,780	0.86	73.0	1.28	108.7
Duxbury WD	14,748	1.29	87.5	1.49	101
Pembroke WD	16,927	0.96	56.7	1.23	72.7
Plympton Self-Supplied Users[1]	2,637	0.18	68[1]	0.18	114[1]
Brockton WC	108,882	6.78	62.3	10.53	89.5
Total	154,974	10.07	65	14.71	94.9
		Residential ADD: 10.07 MGD		**Base ADD: 14.71 MGD**	

(1) Estimated based on USGS "Estimated Use of Freshwater in the United States, 1995"

TABLE 4-10. Per Capita Demand (All Sources)

Town[1]	Population within Watershed	Percent of Population using Septic Systems	Population in Watershed Using Septic Systems	Gross Daily Per Capita Water Consumption (gpcd)	Consumptive Use Factor[3]	Wastewater Infiltration Return Flows into the Watershed[4] (MGD)
Duxbury	2,153	100	2,153	101.0	0.136	0.19
Kingston	10,426	100	10,426	108.7	0.136	0.98
Pembroke	3,486	100	3,486	72.7	0.136	0.22
Plympton	692	100	692	68[2]	0.136	0.04
Brockton[5]	0	All water discharged outside of basin				0
Total	16,757	N/A	16,757	90.7	0.136	1.43

(1) Towns or Cities which obtain drinking water via inter-basin transfer do not return flows to the source watershed. Halifax population within the Jones River Watershed is negligible and has been discounted.
(2) Assumed Gross (base) per capita demand.
(3) Consumptive use of 13.6 percent selected based on USGS "Estimated Use of Water in the United States in 1995," p. 27. Data from Massachusetts, Domestic Usage.
(4) Return flows are equal to the water disposed via septic systems less the consumptive use volume.
(5) Includes Whitman and Hanson.

TABLE 4-14. Estimate of Wastewater Return Flows (1996-2000 avg.) into Watershed

Down-stream Distance (ft)	Habitat Type	Approx. Width (ft)	Approx. length (ft)	Sub-strate	Cover	Comments
0	Pool	4	50	Sand/ silt	Overhead	
55	Riffle	5	5	Pea gravel	Overhead	
60-960	Riffle/Run and pool/ run	15	50 ft segments		Woody debris	Iron flocculate in water
65*	Riffle					***Transect; Approx. Drainage Area of 0.025 mi^2***
380*	Run/ pool					***Transect; Approx. Drainage Area of 0.044 mi^2***
600						Iron flocculate diminished
740						Perennial tributary inflow
960*	Run/ Riffle				No cover	***Transect Approx. Drainage Area of 0.10 mi^2***

TABLE 6-2. Summary of habitat characteristics in the Jones River between Silver Lake and Grove Street bridge.

STATION	Depth (ft)	Brook trout adult	Brook trout juv.	white sucker spawn	white sucker juv.	tessellated darter adult	tessellated darter spawn	Macro-invertebrate
2	*not wetted*							
4	*not wetted*							
6	*not wetted*							
8	0.03	U	U	U	U	U	U	U
9	0.24	U	U	F	F	P	P	U
10	0.15	U	U	F	F	P	P	U
12	*not wetted*							

Key: U – Unsuitable; P – Poor; F – Fair; G – Good; O - Optimal

TABLE 6-3a. Jones River riffle habitat suitability of depths observed at T-65 at 0.6 cfs.

Station	Depth (ft)	Brook trout adult	Brook trout juv.	white sucker spawn	white sucker juv.	tessellated darter adult	tessellated darter spawn	Macro invertebrates
2	*Not wetted*							
4	0.5	U	P	G	O	G	F	U
6	0.6	U	P	O	O	O	O	O
8	0.9	U	F	O	O	O	O	O
9	1.1	U	F	O	O	O	O	O
10	1.0	U	F	O	O	O	O	O
12	0.8	U	F	O	O	O	O	O
14	0.7	U	F	O	O	O	O	O
16	*Not wetted*							

Key: U – Unsuitable; P – Poor; F – Fair; G – Good; O - Optimal

TABLE 6-3b. Jones River riffle habitat suitability of depths observed at T-65 at unregulated August median flow (2.1 cfs).

STATION	Depth (ft)	Brook trout adult	Brook trout juv.	white sucker spawn	white sucker juv.	tessellated darter adult	tessellated darter spawn	Macro-invertebrate
0	*not wetted*							
8.4	*not wetted*							
9.2	0.01	U	U	U	U	U	U	U
10.1	0.1	U	U	U	U	U	U	U
11.5	0.09	U	U	U	U	U	U	U
12.8	0.02	U	U	U	U	U	U	U
15.4	*not wetted*							

Key: U – Unsuitable; P – Poor; F – Fair; G – Good; O - Optimal

TABLE 6-4a. Jones River run/pool habitat suitability of depths observed at T-380 at 0.1 cfs.

STATION	Depth (ft)	Brook trout adult	Brook trout juv.	white sucker spawn	white sucker juv.	tessellated darter adult	tessellated darter spawn	Macro-invertebrate
0	*not wetted*							
8.4	*not wetted*							
9.2	0.21	U	P	G	F	F	F	U
10.1	0.3	U	F	G	G	G	G	U
11.5	0.29	U	F	G	G	G	G	U
12.8	0.22	U	P	G	F	F	F	U
15.4	*not wetted*							

Key: U – Unsuitable; P – Poor; F – Fair; G – Good; O - Optimal

TABLE 6-4b. Jones River run/pool habitat suitability of depths observed at T-380 at 0.6 cfs.

STATION	Depth @ August Median Flow (ft)	Brook trout adult	Brook trout juv.	white sucker spawn	white sucker juv.	tessellated darter adult	tessellated darter spawn	Macro-invertebrates
0.0	*not wetted*							
8.4	0.03	U	U	U	U	U	U	U
9.2	0.86	U	F	O	O	O	O	O
10.1	0.95	U	F	O	O	O	O	O
11.5	0.94	U	F	O	O	O	O	O
12.8	0.87	U	F	O	O	O	O	O
15.4	0.44	U	P	G	O	G	U	U
19.0	0.45	U	P	G	O	G	U	U
22.8	0.29	U	P	F	F	P	U	U
24.4	*not wetted*							

Key: U – Unsuitable; P – Poor; F – Fair; G – Good; O - Optimal

TABLE 6-4c. Jones River run/pool habitat suitability of depths observed at T-380 at August median flow (2.1 cfs).

STATION	Depth (ft)	Brook trout adult	Brook trout juv.	white sucker spawn	white sucker juv.	tessellated darter adult	tessellated darter spawn	Macro-invertebrate
0	*not wetted*							
0.1	*not wetted*							
0.3	0	U	U	U	U	U	U	U
0.6	0.2	U	U	P	P	P	P	U
1	0.2	U	U	P	P	P	P	U
1.5	0.3	U	U	F	F	F	G	U
2	0.2	U	U	P	P	P	P	U
2.5	0.2	U	U	P	P	P	P	U
3	0.1	U	U	P	P	P	P	U
3.3	0	U	U	U	U	U	U	U
5	*not wetted*							

Key: U – Unsuitable; P – Poor; F – Fair; G – Good; O - Optimal

TABLE 6-5a. **Jones River run/riffle habitat suitability of depths observed at T-960 at 0.1 cfs.**

STATION	Depth (ft)	Brook trout adult	Brook trout juv.	white sucker spawn	white sucker juv.	tessellated darter adult	tessellated darter spawn	Macro-invertebrate
0	*not wetted*							
0.1	*not wetted*							
0.3	0.2	U	U	P	F	F	P	U
0.6	0.4	U	U	G	G	G	G	U
1	0.4	U	U	G	G	G	G	U
1.5	0.5	U	P	O	G	O	O	O
2	0.4	U	U	G	G	G	G	U
2.5	0.4	U	U	G	G	G	G	U
3	0.3	U	U	G	G	G	G	U
3.3	0.2	U	U	P	F	F	P	U
5	0.1	U	U	P	F	P	P	U
10	0.0	U	U	U	U	U	U	U
15	*not wetted*							

Key: U – Unsuitable; P – Poor; F – Fair; G – Good; O - Optimal

TABLE 6-5b. **Jones River run/riffle habitat suitability of depths observed at T-960 at 0.6 cfs.**

STATION	Depth (ft)	Brook trout adult	Brook trout juv.	white sucker spawn	white sucker juv.	tessellated darter adult	tessellated darter spawn	Macro-invertebrates
0	*not wetted*							
0.1	0.20	U	U	P	F	P	P	U
0.3	0.40	U	P	G	O	F	F	U
0.6	0.60	U	F	O	O	O	O	O
1.0	0.60	U	F	O	O	O	O	O
1.5	0.70	U	F	O	O	O	O	O
2.0	0.60	U	F	O	O	O	O	O
2.5	0.60	U	F	O	O	O	O	O
3.0	0.50	U	P	O	O	O	O	O
3.3	0.40	U	P	G	O	F	F	U
5.0	0.30	U	P	F	O	P	F	U
10.0	0.20	U	U	P	F	P	P	U
15.0	0.10	U	U	P	P	P	P	U
20.0	*not wetted*							

Key: U – Unsuitable; P – Poor; F – Fair; G – Good; O - Optimal

TABLE 6-5C. **Jones River run/riffle habitat suitability of depths observed at T-960 at August median flow (2.1 cfs).**

Subbasin	Area (Sq. Mi.)	JUNE-OCT* (0.5 cfsm)	OCT-MARCH (1.0 cfsm)	MARCH-APRIL (3.2 cfsm)	MAY & JUNE (1.0 cfsm)
Silver Lake	4.09	2.0	4.1	13.1	4.1
(estimated, cfs)		0.0	0.0	0.8	0.1
Pine Brook	4.74	2.4	4.7	14.7	4.7
(estimated, cfs)		1.2	2.3	6.3	4.1
Halls Brook	4.11	2.1	4.1	13.2	4.1
(estimated, cfs)		4.1	7.0	14.7	9.3
Jones River Brook	4.80	2.4	4.8	15.4	4.8
(estimated, cfs)		4.5	5.7	15.6	10.0
Furnace Brook	2.25	1.1	2.3	7.2	2.3
(estimated, cfs)		3.7	5.6	13.8	7.8
Smelt Brook	2.69	1.3	2.7	8.6	2.7
(estimated, cfs)		5.0	8.0	16.2	10.6
Jones River – Fresh	4.18	2.1	4.2	13.4	4.2
(estimated, cfs)		2.9	4.7	11.0	7.0
Jones River – Tidal	2.92	1.5	2.9	9.3	2.9
(estimated, cfs)		5.7	8.9	16.1	4.1

* - Estimated baseflow values, a more appropriate estimate of instantaneous streamflows from June-October in GZA's opinion, were used for comparison purposes. The lowest monthly value for each season is provided in the table.

TABLE 6-6. Flow recommendations (cfs) based on USFWS ABF Policy compared to estimated current streamflow based on water budget analysis.

	2000		1999		1998[1]		1997[1]		1996[1]	
	% of yearly total	MG	% of yearly total	MG	% of yearly total	MG	% of yearly total	MG	% of yearly total	MG
Residential										
Residential Area	64	2,277	63	2,094	64	2,277	69	2,415	47	1,941
Other Residential Area	5	210	5	153						
Semi-Residential										
School	3	128	1	49						
Institution	1	35	0	3	11	379	15	540	7	290
Medical Facility	1	68	1	38						
Industrial/Agricultural	3	118	4	141	5	164	4	144	3	110
Transient										
Recreational Area	0	3								
Service Station										
Restaurant			0	2						
Hotel/Motel	0	1	0	1						
Other Transient Area										
Other										
Commercial	12	442	17	583	10	343	10	338	6	264
Other Area					9	305	6	225	17	716
Unaccounted	7	271	7	265	2	77	6	211	15	645
TOTALS (MG)	**3,554 MG**		**3329 MG**		**3553 MG**		**3,497 MG**		**4,174 MG**	
Change from previous year (MG)	**+ 225**		**- 224**		**+ 56**		**- 677**		**ND**	
Change from previous year (%)	**+ 6**		**- 6**		**+ 2**		**- 16**		**ND**	

Notes: ND = No Data; MG = Million Gallons
1. The format of the form changed between 1998 and 1999 and the new form required different and more detailed responses. The figures in the "other" category are from the less specific responses of the previous form and may not account for the entire water use.

TABLE 6-8. Consumption rates by sector for the City of Brockton 1997-2000.

	2000		1999		1998		1997		1996	
	% of yearly total	MG	% of yearly total	MG	% of yearly total	MG	% of yearly total	MG	% of yearly total	MG
Residential										
Residential Area	57	272	54	265	60	253	78	368	77	365
Mobile Home Park	4	21	4	24						
Other Residential Area	1	2								
Semi-Residential										
School	2	8	1	4						
Institution	1	6	1	6	< 1	2	< 1	3		
Medical Facility	1	0.44	1	0.3						
Industrial/Agricultural			1	2	< 1	0.4	< 1	3	3	6
Transient										
Service Station	1	0.48	1	0.8						
Restaurant	1	6	1	7						
Hotel/Motel	1	2	1	2						
Other										
Commercial	13	60	14	69	16	68	13	58	10	51
Other Area	3	13	3	18	6	28				
Unaccounted	18	87	18	90	17	74	9	41	10	47
TOTALS (MG)	**477.2 MG**		**486.5 MG**		**426.8 MG**		**473.8 MG**		**469.3 MG**	
Change from previous year (MG)	**- 9**		**+ 60**		**- 47**		**+ 5**		**ND**	
Change from previous year (%)	**- 2**		**+ 13**		**- 10**		**+ 0**		**ND**	

Notes: ND = No Data; MG = Million Gallons

1. The format of the Public Water Supply Statistical Report changed between 1998 and 1999 and the new form required different and more detailed responses. The figures in the "other" category are from the less specific responses of the previous form.

TABLE 6-9. Consumption rates by sector for the Town of Kingston 1996-2000